

Exploring the Evolution of LEGO Set Complexity, Pricing, and Themes Over Time

Work-in progress presentation

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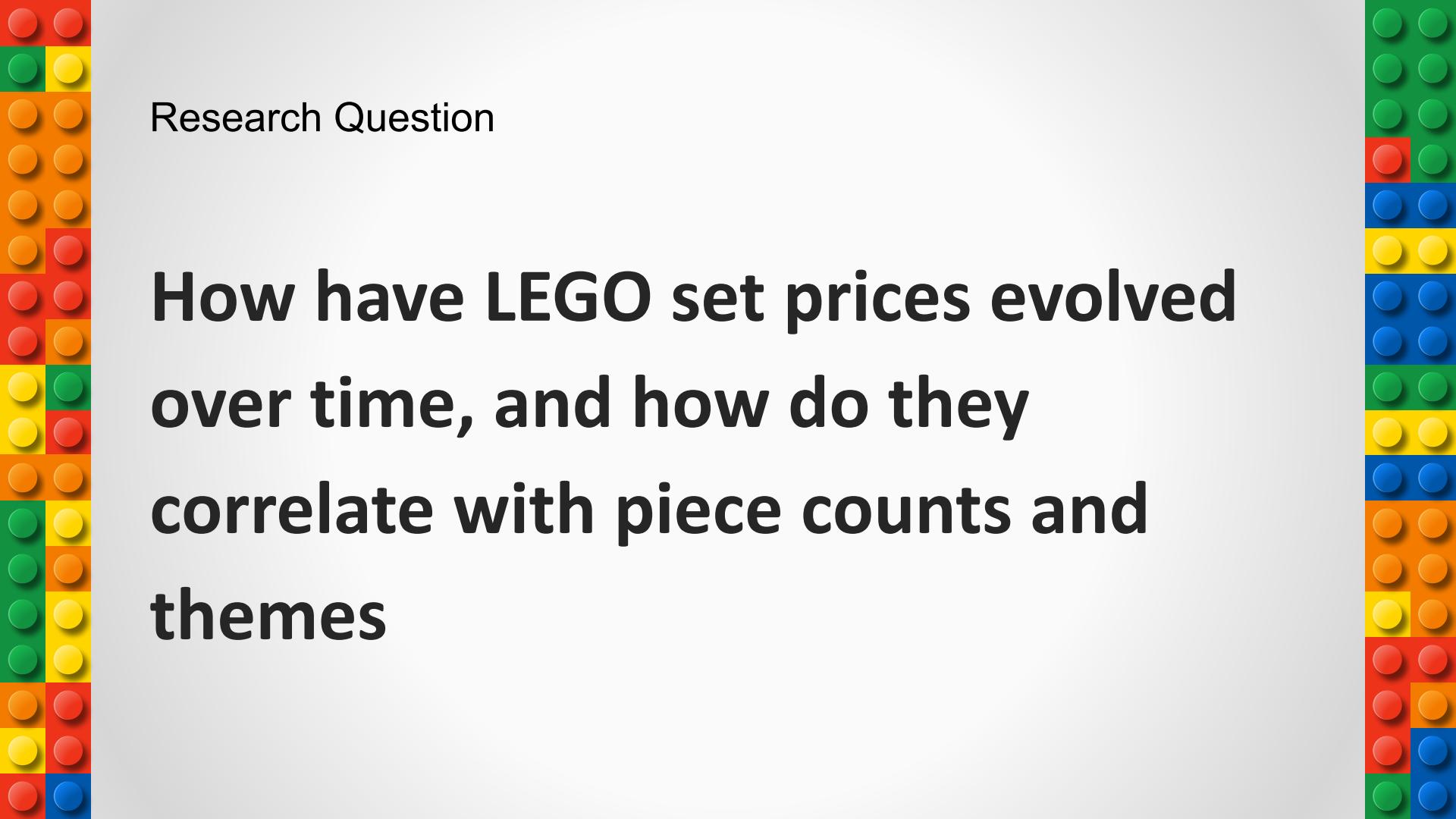
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Introduction

LEGO Sets and Prices Over Time

- Dataset: LEGO Sets and Prices Over Time by Alex Racape (Kaggle)
- Why are LEGO sets so expensive? We are exploring the impact of piece count, licensing, and collector demand on pricing.



Research Question

How have LEGO set prices evolved over time, and how do they correlate with piece counts and themes

Exploration Overview

What We Are Investigating

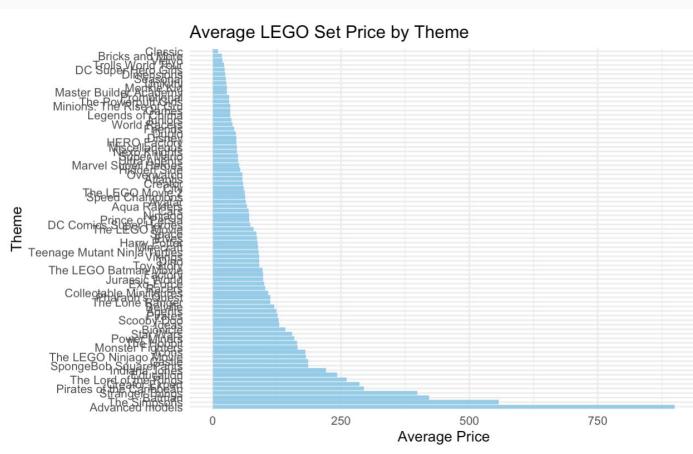
- Analyzing trends in LEGO set prices over time.
- Exploring relationships between LEGO set themes, piece counts, and prices.
- Identifying notable shifts or patterns in pricing trends.



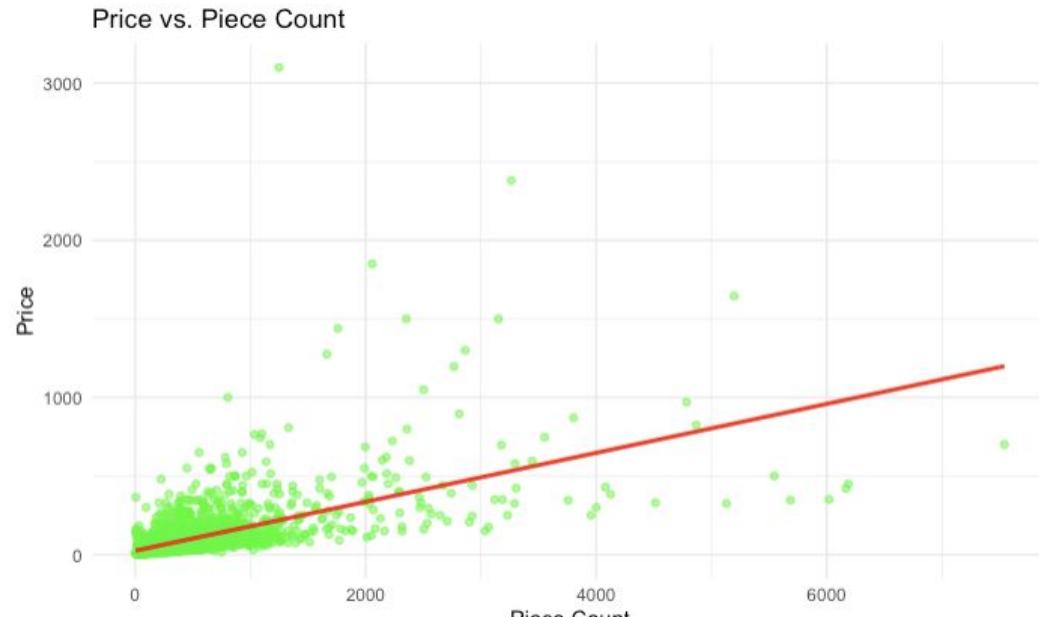
Insight Gained

Key Finding So Far

- Insight: LEGO sets with higher piece counts tend to have disproportionately higher prices.
- Observation: Some themes (e.g., Star Wars) maintain premium pricing consistently.



- Larger sets tend to cost more, which aligns with the general positive trend shown.
- Some sets (outliers) with high prices for their piece count may reflect collector demand or licensing effects (e.g., Star Wars or Harry Potter themes).



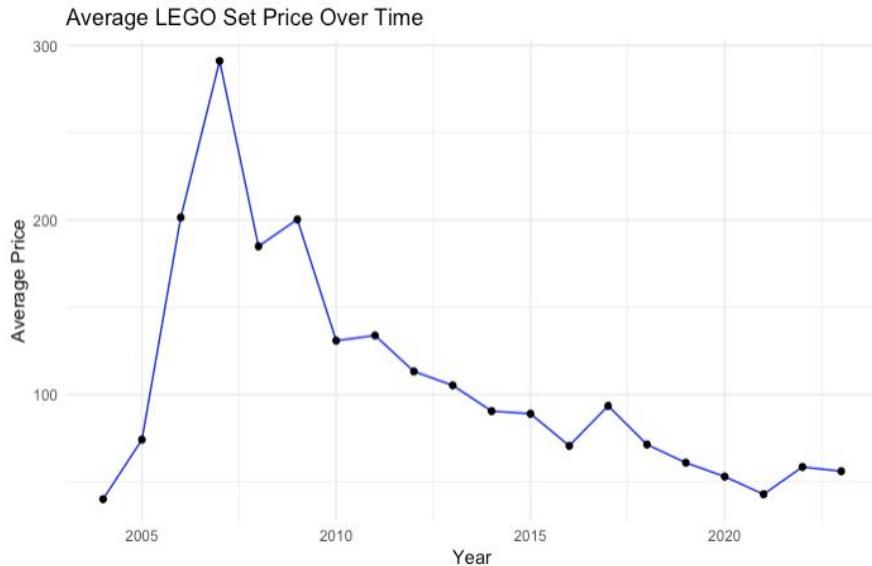
Fun Fact:

The highest average lego set price over time was in 2008

Pricing Trends over Time

```
{r}
avg_price_per_year <- legoData %>%
  group_by(Year) %>%
  summarize(avg_price = mean(Current_Price, na.rm = TRUE))

ggplot(data = avg_price_per_year, aes(x = Year, y = avg_price)) +
  geom_line(color = "blue") +
  geom_point() +
  labs(
    title = "Average LEGO Set Price Over Time",
    x = "Year",
    y = "Average Price"
  ) +
  theme_minimal()
```



Challenge Encountered

Obstacle in Analysis

- Challenge: Limited metadata on certain older sets.
- Impact: Difficulty in analyzing long-term trends accurately.
- Future implementation: Supplementing with external LEGO fan databases.

Next Steps

Plans Moving Forward

- Deep dive into pricing dynamics across different regions.
- Compare modern vs. vintage sets in terms of value and popularity.